

Nutritional status and morbidity pattern in school age children in Nepal

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ABSTRACT

School Health has been regarded as a high priority intervention in developing countries. However it has not been prioritized in Nepal for many years. The objectives of the study are to find out the nutritional status and morbidity pattern in school age children. To arouse importance of personal hygiene and healthful surrounding through information, education and communication (IEC). This cross-sectional study was administered in two schools located in Bolde phedechi and Mahure of Kavrepalanchowk. From the selected schools, a total number of 160 students studying from Grade 1 to V were enumerated in the study using census survey method. Among 160 students, the most important three problems were pediculosis 42(26.2 %), dental caries 29(18.1%), and waxy ear 27(17.1 %). Thus the school health education should put more emphasis on oral care, nutrition, personal hygiene and others. Applying classification of Indian Academy of Pediatrics: based on weight for age, 36(55.3%) boys and 34(35.8%) girls fall under 1st degree malnutrition and 15(23.07%) boys and 44(46.3%) girls fall under IInd degree malnutrition, 7(7.2 %) girls fall under IIIrd degree malnutrition. The health and nutritional standards of school children in this study were found to be unsatisfactory. Among different morbidity pediculosis is found more in girls. The present study put more emphasis on the need for initiation of school health program in the school with more on improving personal hygiene, prevention of disease like parasitic infection/infestation and improvement of their nutritional status.

Keywords: Morbidity, nutritional status, school age children.

Introduction

Although the World Bank has included school health as one component of its essential public health package for cost effective health program, the nutrition and health of school- age children in the developing world has received a little attention.¹ WHO in 1997, developed 10 recommendations for school health, and initiated a global school health initiative in ten countries, of which

8 were developing countries.² Despite such initiatives, school health has not been focused on in Nepal for many years and donor initiated school health projects have come and gone sporadically over the decades.

School health program is an important aspect of any community health program. If we talk of Nepal total population is 336,478 in the year 2006, out of which 0-14 years population is 124,975.³ Children are the ambassadors to aware family as well as community as

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a whole to prevent communicable diseases and promote healthy behaviors. School is the right place where we can early detect and treat health problems. According to modern concepts, school health service is an economical and powerful means of raising community health and more important in future generations. By simply doing periodic medical examination and daily morning inspection of students only we can detect many more problems and treat accordingly. The health problems of students vary country to country. The most prevalent health problems are malnutrition, infectious disease, intestinal parasites, and diseases of skin, eye, ear and dental caries. This study is an attempt to determine the nutritional status and morbidity pattern of school children.

Materials and methods

The study design was descriptive cross sectional type conducted in Bolde Pedhece and Mahure VDC of Kavrepalanchowk for the period of one month. The purpose of the study was explained to the school Principals and they provided permission to conduct the study on their respective schools as well as verbal consent was taken from each respondent. Those students studying from class I to class V were taken and those who were not willing to participate were excluded from the study. The study population was all the 160 students and purposive sampling was done. For Absentees students, two visits were done to locate them in the school. The structured questionnaire was developed and the pre-testing was done and protested populations were not included in the study. The questionnaire consisted of demographic information regarding name, age, sex, standard in which he/she was studying, physical examination, personal hygiene.

The instruments used were- weighing machine, measuring tape and thermometer. A brief health education session was given to the teachers and students after completion of the study. Each child was identified by name, age, sex and weighing scale was used to measure the weight in kilograms. The scale was calibrated against known weight regularly. Zero error was checked for and removed everyday if present. Cloths were not removed, as adequate privacy was not available (in classroom). As the study was conducted in the summer, the students wore only light cloths. The weights were recorded to the nearest 100 gms. Height in centimeters was marked on wall in school with the help of a measuring tape. The students were asked to remove their shoes and stand with heels together and head positioned in such a way that the line of vision was perpendicular to the body. A scale was brought down to the topmost point on the head of students standing against the wall where the calibration was done. The height was measured to the nearest 0.5cm. Health Examination of each and every student underwent a thorough physical and systemic examination including a careful clinical history. The personal hygiene was assessed by observing them. The parents and children were provided with health information and suggested to contact the nearest health institution if needed.

Collected data was entered in Microsoft Excel. Analysis was done with the help of SPSS. Simple frequency and percentage were calculated.

Results

The total numbers of students were 160. The boys were 65(40.6%) and girls were 95(59.4%).

Table1. Distribution of school age children by Age and Sex

Age (years)	Boys N (%)	Girls N (%)	Total N (%)
5	12(18.6%)	3 (3.2%)	19(9.4%)
6	5 (7.7%)	1(1.1%)	6 (3.8%)
7	9 (13.8%)	2(2.1%)	11 (6.9%)
8	8 (12.3%)	10 (10.5%)	18(11.3%)
9	10 (15.4%)	28(29.5%)	38(23.8%)
10	4 (6.2%)	26 (27.4%)	30(18.8%)
11	7 (10.8%)	10(10.5%)	17(10.6%)
12	10 (15.4%)	15(15.8%)	35(15.6%)
Total	65 (100.0)	95 (100.0)	160 (100.0)

In the above table the total number of students' falling under the age group of 5 years is 19(9.4%) out of which 12(18.6%) were boys. The number of six years children was 6(3.8%) out of which 5(7.7%) were boys. The number of seven years children was 11(6.9%) out of which 9(13.8%) were boys. The number of 8 years children were 18(11.3%) out of which 8(12.3%) were boys. In the age group 9 years, total students were 38(23.8%) out of which 10(15.4%) were of boys. The number of ten years students was 30 (18.8%), out of which boys were 4(6.2%). The 11 years students were 17(10.6%) of which 7 (10.8%) were boys. Twelve years students were 35(15.6%) out of which 10(15.4%) were boys.

Table2. Morbidity pattern among school children.

Rank	Morbidities/ Observation	Boys (n=65) N (%)	Girls (n=95) N (%)	Total (n=160) N (%)
1.	Poor personal hygiene	35(53.8)	22(23.1)	57 (35.6)
2.	Pediculosis	2(3.07)	40 (42.1)	42 (26.2)
3.	Dental caries	13(20.0)	16(16.5)	29 (18.1)
4.	Waxy ear	15(23.07)	12 (12.6)	27 (17.1)
5.	Conjunctivitis	-	5 (5.3)	5 (5.3)

One of the objectives of this study was to determine common morbidity in school children. Pediculosis was the commonest 42(26.2 %), followed by dental carries 29(18.1%). Poor personal hygiene was observed in boys and pediculosis among girls.

Table 3. Weight for Age per IAP Classification

Label	Range	Boys (n=65)	Girls (n=95)	Total (n=160)
		N (%)	N (%)	N (%)
Normal	>80%	14 (21.5)	10 (10.5)	24(15.0)
Grade I (Under nutrition)	71%-80%	36 (55.3)	34(35.8)	70(43.7)
	(Mild malnutrition)			
Grade II (Under nutrition)	61%-70%	15 (23.0)	44(46.3)	59(36.8)
	(Moderate malnutrition)			
Grade III (Under nutrition)	51%-60%	-	7(4.3)	7 (4.3)
	(Severe malnutrition)			
Grade IV (Under nutrition)	<50%	-	-	-
	(Very severe malnutrition)			
	Total	65(100.0)	95(100.0)	160(100.0)

Weights for age were compared with Indian Academy of Pediatrics (IAP) classification. There were 24(15%) students with normal weight out of which 14(21.5%) were boys. In mild malnutrition out of total 70(43.7%), 36(55.3%) were boys. Under the category of moderate malnutrition of total 59(36.8%), 15(23.0%) were boys. In severe malnutrition the total 7(4.3%), of which only 7(4.3%) were girls.

Discussion

School health surveys give excellent chance to screen a huge number of pediatric populations with minimum resources. The present study was undertaken to find out the nutritional status and morbidity patterns of the students. The survey done in Pokhara, found the prevalence of dental caries (41.5%), worm infestation (33.7%) and pediculosis (32.6%) in both sexes in six governmental primary school in Pokhara valley.⁴ In one of the study pediculosis (29.8%) found among the girls students.⁵

Similarly, in a study done in Bhaktapur found the prevalence of important problems detected were ear problems(22.03%), worm infestation (16.10%) and dental caries (13.56%).⁶ A survey done in 2006 (NDHS) found that 49% of children below 5 years of age are affected by stunting, a sign of early chronic malnutrition. The same survey also showed that 39% of the children are underweight and 13% of the children below 5 years are wasted, an indicator of acute malnutrition.³

In World, the prevalence of malnutrition in term of underweight, stunting and wasting are 27%, 31% and 10% respectively.⁷ Nepal is a rural country where more than 90% of population lives in villages. A survey done in Pokhara, found that the prevalence of wasting and stunting in the school children (4-15 years of age) are 10.3 % and 14.9% in six governmental primary school in Pokhara valley.⁴

The study of UNICEF, Nepal has found that 50% of under-5 children were found malnourished and 11% were severely malnourished among them.⁸ Likewise in a study by Nepal Demographic and Health Survey, 2001 detect the prevalence of underweight (48.3%) and wasted children (10%) and stunted (50%).³ Children in rural areas are more likely to be stunted (52%) than in urban area (37%) among under 5 children. Similarly a survey done in Bode, Bhaktapur shows that there was chronic under-nutrition in more than 80% of the children above one year of age.⁹ Likewise, in a study done in different state of India like in Ludhiana School children show the prevalence of 52.2% of malnutrition.¹⁰ The finding is supported by a study in Pokhara where it is found that 36(85%) shows the prevalence of malnutrition out of which 51(31.8%) and 85(89.4%) both boys and girls students.³

Conclusion

The health and nutritional standards of school children in this study were found to be unsatisfactory. Among different morbidity pediculosis is found more in girls. The present study put more emphasis on the need for initiation of school health program in the school with more on improving personal hygiene, prevention of disease like parasitic infection/infestation and improvement of their nutritional status.

The situation in Nepal is extremely dire with more than 60% of the population are or below poverty level.

Malnutrition is widespread and 1 in every 5 children dies before the age of 5. The development of a country depends upon the development of children thus; if we help these children today the nation will get civilized citizen tomorrow.

References

1. World Bank. Investing in Health: World Bank Report. hington DC: (1993) America.
2. L. Kolbe. Build-ing the capacity of schools to improve health. San Francisco: (2001). Jossey-Bass.
3. Nepal Demographic and Health Survey (2001).
4. L. Shrestha, J. Khatri. Health status of school children of Pokhara valley, *Nepal. J. of Nepal Med Asso* 2003; **42**(147):128-32.
5. S.R. Shakya, S. Bhandary, P.K. Pokharel. Nutritional status and morbidity pattern among governmental primary school children in the eastern Nepal. *Kathmandu University Med. J.* 2004;**2**(4) 8: 307-14.
6. S. Pandey, I. Dudani, A. Pradhan. Health Profile of School Children in Bhaktapur, Nepal. *Kathmandu Uni Med J*, 2005; **3**(3): 274-80.
7. UNICEF. (2004). The state of the world's children.
8. UNICEF. (1991). Trends in Nutritional Status in Nepal. Kathmandu: Nepal.
9. T. Rana, S. Paharis. Nutritional status survey of under 6 years old of Bode, *Bhaktapur, Nepal Pediatric J*, 1984; **3**(2):169-82.
10. P. Panda, A. Benjamin. Health Status of School Children in Ludhiana City," *Indian J. of Community Med* 2000; **25**(4):250-55.